CLAIMS

What is claimed is:

1. Method of estimating a node size for a system offering at least one of a plurality of services requiring transmission of data to a subscriber, the method utilizing a computer program in a computer and comprising:

(a) inputting system bandwidths for at least one of downstream and upstream passbands into a system bandwidth field in the computer;

(b) inputting node splitting information on a number of nodes per transmitter that will share the same services into node splitting and return combining information fields in the computer;

(c) inputting any limitations on the downstream and upstream passbands that are unavailable for use by the system into an unavailable bandwidth field in the computer;

(d) inputting requirement information for services including at least one of analog broadcasts, digital broadcasts, polled access/control, cable modem, telephony, interactive video and video on demand services, including at least one of a required channel width and channel quantity for at least one of downstream and upstream services, and the type of data modulation and payload data rate per channel to be utilized into service table fields for each of the services;

(e) inputting estimated service penetration rates for homes passed that will subscribe to each of the services, estimated simultaneous use rates, and a desired downstream data rate to be received by each subscriber into respective fields for each of the services in the computer;

(f) calculating the node size required using the computer program with data input in steps (a) - (e); and

(g) outputting a recommended number of homes passed per node.

2. Method of claim 1 wherein system bandwidths, limitations and requirement information for services for both the downstream and upstream passbands are input in the computer.

3. Method of claim 2 wherein calculating the node size further comprises:

subtracting unavailable upstream and downstream passbands from the input system bandwidths to determine an available interactive bandwidth;

dividing the available interactive bandwidth by the number of nodes per transmitter entered in the node splitting and return combining information fields for the downstream and upstream passbands respectively to determine an available bandwidth per node for the downstream and upstream passbands;

calculating the amount of subscribers that can be simultaneously supported for each service based on subscriber data rates and payload data rates;

calculating the node size utilizing the penetration rate, the simultaneous use rate and the available bandwidth per node for each of the upstream and downstream bandwidth passbands by:

(i) starting with an overestimate of number of homes passed per node,

(ii) using the penetration rates and the simultaneous use rates to determine a number of subscribers simultaneously using each service,

(iii) dividing the number of subscribers simultaneously using each service by a number of subscribers per service channel to determine a required number of service channels,

(iv) multiplying the number of service channels required by the bandwidth required for each service channel to determine a total interactive bandwidth required, and

(v) comparing the total required interactive bandwidth with the available interactive bandwidth and if the total required interactive bandwidth is greater than the available interactive bandwidth, iteratively reducing the number of homes passed and repeating the calculation of steps (ii) to (iv) until the total required interactive bandwidth is less than or equal to the available interactive bandwidth to determine a maximum number of homes passed per node; and

comparing the maximum number of homes passed per node for the upstream and downstream bandwidth passbands and reporting a lower of these numbers.

4.   Method of claim 2 further comprising:

determining whether the upstream or downstream passband is constricting the node size; and

outputting a report of the passband that is constricting the node size.

5.   Method of claim 1 further comprising entering identifier information into an identifier information table in the computer for a desired node size estimation.

6.   Method of claim 5 wherein the identifier information includes a customer name and a customer contact.

7.   Method of claim 1 further comprising:

initially selecting one of a channelized and a non-channelized format for at least one of the upstream bandpass and the downstream bandpass; and

calculating a channelized bandpass available bandwidth when the channelized format is selected.

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8. Method of claim 1 further comprising:

providing a menu driven graphical user interface for inputting data.

9. Method of claim 1 further comprising providing default values for at least one of the fields based on a computer program provider's equipment.

10. Estimating tool for calculating a node size for at least one of interactive video, voice or data services placed on a network, comprising:

a computer processor and a data storage device in communication with the computer processor;

a data entry device in communication with the computer processor and the data storage device;

first means for receiving data on bandwidths for downstream and upstream passbands;

second means for receiving data on node splitting information on a number of nodes per transmitter that will share the same services;

third means for receiving data on any limitations on the upstream and downstream passbands that are unavailable for use by the system;

fourth means for receiving data on requirement information for services including at least one of analog broadcasts, digital broadcasts, polled access/control, cable modem, telephony, interactive video and video on demand services, including at least one of a required channel width and channel quantity for upstream and downstream service, and the type of data modulation and payload data rate per channel to be utilized;

fifth means for receiving data on estimated service penetration rates for homes passed that will subscribe to each of the services, estimated simultaneous use rates, and a desired downstream data rate to be received by each subscriber;

sixth means for processing the data received in the first through fifth data receiving means to calculate the node size for the network node.